

II. Response to the Office Action Dated November 4, 2004:

A. Status of the Claims

Claims 28-47 were pending at the time the Office Action dated November 4, 2004, was issued from the U.S. Patent and Trademark Office. No claims have been amended, added, or canceled. Therefore, claims 28-47 are currently pending.

B. The Obviousness Rejection is Overcome

1. Summary of the Rejection

The Action rejects claims 28-47 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,183,870 to Fukushima *et al.* The Action states that this reference discloses “a polybutylene glycol di(meth) acrylate) represented by the general formula:



The Action, page 2. The Action then admits that Fukushima *et al.* fails to disclose Applicants claimed monomer (I) which includes either a **propyleneoxy** group or a **methylethyleneoxy** group. *Id.* at 4.

In an effort to supplement Fukushima’s deficient disclosure, the Action contends that a person of ordinary skill in the art would expect Fukushima’s butyleneoxy group to be functionally similar to Applicants’ claimed propyleneoxy group. From this, the Action concludes that it would have been obvious to a person of ordinary skill in the art to modify the above polybutylene glycol to include a propyleneoxy group.

Applicants disagree. Claims 28-47 are not obvious over Fukushima *et al.*

2. Summary of Arguments

The Action’s arguments have no factual basis and appear to rely solely on legal precedent. By contrast, Applicants have previously provided factual evidence showing that

Fukushima's butyleneoxy group is not functionally similar to Applicants' claimed propyleneoxy group. See pages 14-16 of Applicants' previous Response filed with the U.S. Patent Office on November 12, 2003. The arguments made in the November Response are incorporated by reference.

As discussed below, Applicants provide additional factual evidence showing a lack of functional similarities between Fukushima's butyleneoxy group and Applicants' claimed propyleneoxy group.

1. Fukushima's Butyleneoxy Group and Applicants' Claimed Propyleneoxy Group Have Functional Dissimilarities

There are functional dissimilarities between Fukushima's butyleneoxy group and Applicants' claimed propyleneoxy group. For instance, the compositions of the present invention have lower water absorption values when compared to the Fukushima *et al.* compositions. As noted by Fukushima *et al.*, low water absorption is advantageous (*e.g.*, it can increase the thermal resistance of a composition):

Important properties required of plastic lenses include high thermal resistance, high impact resistance, low water absorption, molding surface accuracy, dye- 25
ability and the like. Conventionally, monomers and

Col. 1, lines 23-26.

On the other hand, however, this approach has posed a problem concerning the retention of high thermal resistance, low water absorption and high surface accu- 45
racy which are required of lenses. In order to achieve high thermal resistance and low water absorption, it generally suffices to impart low water absorption properties to the polymer. Improvement of the low water absorption properties of a polymer has been achieved 50
by introducing a hydrocarbon chain, aromatic ring or halogen atom into the molecule thereof (Japanese Patent Laid-Open No. 66401/'82). This method brings about high thermal resistance and low water absorption, but causes a reduction in impact resistance and dyeabil- 55
ity.

Id. at lines 43-56.

The non-limiting compositions in Examples 1 and 6 in Applicants' specification include a propyleneoxy group (*i.e.*, polypropylene glycol dimethacrylate (CD6440P)). *See* Applicants' specification at page 15, line 32; page 19, line 1. The water absorption values for these compositions were measured at .58 and .75, respectively. *Id.* at page 21, line 30, to page 22, line 5. The water absorption properties of these compositions are advantageously lower when compared to the compositions disclosed in Fukushima *et al.*

For example, the compositions disclosed in Examples 1 through 22 of Fukushima *et al.* contain butyleneoxy groups (nonabutylene glycol dimethacrylate (9 BGDM)). Fukushima *et al.*, col. 10, line 63, and col. 12, line 12. The water absorption values for the butyleneoxy group containing compositions range from 1.0 to 1.6. *Id.* at Tables 1-4. This is an increase of at least 25% to 42% of the water absorption properties when compared to Applicants' claimed propyleneoxy group containing compositions.

Applicants' compositions containing a propyleneoxy group are superior to Fukushima's butyleneoxy group containing compounds because of the lower water absorption properties. As noted above, lower water absorption properties can increase the thermal resistance of the compound. The superior properties of Applicants' claimed propyleneoxy group containing compound is strong evidence that Applicants' claimed invention is not obvious over the Fukushima *et al.* reference. *See In re Chupp*, 816 F.2d 643, 647 (Fed. Cir. 1987) (Holding that "Chupp's evidence that the claimed compound possesses superior herbicidal activity on quackgrass and yellow nutsedge in corn and soybeans is sufficient to rebut the *prima facie* case of obviousness.").

Additionally, as noted in Applicants' previous November 12, 2003, Response, Fukushima *et al.* also compared the water absorption properties between the structural homologues of 9BGDM and 9EGDM which differ by only two CH₂ groups. The data in Fukushima *et al.* show

that the compositions containing 9BGDM had a water absorption value of 1.6% (example 7) and 1.4% (example 11), respectively. Fukushima *et al.*, col. 15, Tables 1 and 2. In stark contrast, however, the compositions that used the 9EGDM homologue had a much larger water absorption value (3.6% (comparative example 7) and 4.1% (comparative example 11), respectively. *Id.* This is factual evidence of non-obviousness.

All of the evidence discussed above is sufficient to rebut any *prima facie* case of obviousness based on the structural similarities of Applicants' claimed propyleneoxy group and the disclosed Fukushima *et al.* butyleneoxy group. See *In re Papesch*, 315 F.2d 381, 390-91 (C.C.P.A. 1963) ("In determining whether the claimed compounds are obvious within the meaning of 35 U.S.C. 103, we think their properties may and should be considered, and having considered the properties, we are convinced the compounds...are patentable over Karrer.") (quoting *In re Petering and Fall*, 301 F.2d 676); see also *In re Ackermann*, 444 F.2d 1172, 1176 (C.C.P.A. 1971) (In finding non-obviousness, the Court reasoned "[t]he mere fact that such evidence deals with only one of a spectrum of properties possessed by that subject matter does not detract from its relevance.").

2. The Action Provides No Factual Evidence To Support Its Position

The Action provides no factual evidence to support its obviousness position. Rather, the Action's contentions appear to be derived from legal precedent only. For example, the Action cites to *In re Wilder*, 563 F.2d 457 (C.C.P.A. 1977) for the proposition that "structural similarities have been found to support a *prima facie* case of obviousness." The Action, page 6. Other than this general legal statement, no factual evidence has been put forward by the Action.

In re Wilder is distinguishable from Applicants' present case. *In re Wilder* concerned a claimed chemical compound: N-(1,4-dimethylamyl)-N'-phenyl-p-phenylenediamine. *Id.* at 458. The examiner rejected the claims as being obvious over a reference that disclosed a structural

homologue that differed by one CH₂ group. *Id.* at 457-58. In upholding the obviousness rejection, the Court stated that the evidence of record "...does not point out a single *actual* difference in properties between the claimed compound and the homologue." *Id.* at 460 (emphasis not added).

By contrast to *In re Wilder*, Applicants have presented evidence showing an "*actual* difference in properties between the claimed compound" and the butyleneoxy containing compositions in Fukushima *et al.* Applicants have provided factual evidence that shows that there is at least a 25% to 42% reduction in water absorption properties with compositions comprising a propyleneoxy group when compared to compositions containing a butyleneoxy group. *See above.* Lower water absorption values can be advantageous. *See Fukushima et al.*, col. 1, lines 43-56.

Therefore, unlike *In re Wilder*, Applicants have provided strong evidence that rebuts any presumption of obviousness based on the structural similarities between Fukushima's butyleneoxy group containing compounds and Applicants' propyleneoxy group containing compounds. *See In re Chupp*, 816 F.2d at 646; *In re Ackermann*, 444 F.2d. at 1176. The present obviousness rejection is therefore overcome and should be withdrawn. *See In re Papesch*, 315 F.2d at 386 (In finding non-obviousness, the Court stated "[i]f that which appears, at first blush, to be obvious though new is shown by evidence *not* to be obvious, then the evidence prevails over surmise or unsupported contention and a rejection based on obviousness must fall.") (emphasis not added).

C. Conclusion

Applicants believe that the present document is a full and complete response to the Office Action dated November 4, 2004. The present case is in condition for allowance, and such favorable action is requested.